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| **Riordan Manufacturing** |
| Riordan Manufacturing is a global plastics manufacturer employing 550 people with projected annual earnings of $46 million. The company is wholly owned by Riordan Industries, a Fortune 1000 enterprise with revenues in excess of $1 billion.Its products include plastic beverage containers produced at its plant in Albany, Georgia, custom plastic parts produced at its plant in Pontiac, Michigan, and plastic fan parts produced at its facilities in Hangzhou, China. The company's research and development is done at the corporate headquarters in San Jose. Riordan's major customers are automotive parts manufacturers, aircraft manufacturers, the Department of Defense, beverage makers and bottlers, and appliance manufacturers. |
| **Mission** |
| **Our Focus*** Six Sigma, leading edge R&D and exceeding ISO 9000 standards define the attitude and abilities of Riordan Manufacturing.
* We are industry leaders in using polymer materials to provide solutions to our customers challenges.
* Our R&D is, and will remain, the industry leader in identifying industry trends.

**Our Customer Relationships*** We will strive to be a solution provider for our customers and not be a part of our customers challenges.
* Long-term relationships will be sought by maintaining rigorous quality controls, innovative solutions, a responsive business attitude and reasonable pricing.

**Our Employees*** We will maintain an innovative and team oriented working environment.
* By assuring that our employees are well informed and properly supported, we will provide a climate focused on the long term viability of our company.

**Our Future*** We must be focused in achieving and maintaining reasonable profitability to assure that the financial and human capital is available for sustained growth.
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| **History** |
| The company was founded by Dr. Riordan, a professor of chemistry, who had obtained several patents relative to processing polymers into high tensile strength plastic substrates. Sensing the commercial applications for his patents, Dr. Riordan started Riordan Plastics, Inc. in 1991.Initially, the company's focus was on research and development and the licensing of its existing patents, but in 1992 Dr. Riordan obtained venture capital which he used to purchase a fan manufacturing plant in Pontiac, MI. At that time, the company's name was changed to "Riordan Manufacturing, Inc." In 1993, the company expanded into the production of plastic beverage containers when it acquired a manufacturing plant in Albany, GA.The company's most recent expansion took place in 2000 when it opened its operations in China. At that time, the entire fan manufacturing operation was moved from Michigan to China and the Pontiac, MI facility was retooled for the manufacture of custom plastic parts. |

***Final Product Shipping***

As the sales department completes orders, the sales orders are entered into the customer

shipping and billing system. The order shipping team draws finished products out of

inventory based on the shipping documents generated out of the customer shipping and

billing system.

After orders are fulfilled and loaded for shipment, the truck number, date and time of

shipment are updated into the customer shipping and billing system for tracking

purposes. At the end of each day, a copy of all orders shipped is given to the inventory

clerk so the inventory system can be updated.

At the end of December each year, a physical inventory is conducted in order to reconcile

the quantities of raw materials, sub-assemblies and finished products on hand with the

inventory system.

The following flow diagram describes the shipping process at all plants.

Orders from customers come into Riordan via phone or

fax. There is also a sales staff that can place orders for

customers.

Sales

Order

Form Customer Shipping and

Billing System

The sales orders are entered

into the customer shipping and

billing system.

Order

Shipping

Documents

Shipping document are given to the driver.

Based on the shipping document

generated each day, the shipping

department will load the trucks with

the products specified by each order.

Satisfied Cusomer

The inventory clerk updates the inventory system based

on the shipping documents.

**Supply Chain**

The R & D Department at Riordan’s Corporate Headquarters consists of 5 product development personnel. Their job is to research and develop the next generation of heart valves, medical stents, and complementary medical devices. Since new product development efforts require only a small amount of raw materials and components to build proof-of-concept models or initial working models of potentially new products, their material and component requirements can be described as very minimal. Consequently, the R & D Department does not have the same supply chain problems as its other plants have.

Albany, GA

Plastic bottles are produced at the Albany, GA facility. Contracts are negotiated with customers for yearly quantities of standard and customer-unique bottles.

Regardless of the contracts it receives for yearly quantities of bottles that each customer orders, the customers actually provide release orders for smaller quantities throughout the year against the yearly totals. These release orders are received at random since each customer’s requirement for bottles varies as a function of the variability of the sales of the customer’s final products that use the bottles.

As a consequence of receiving releases at varying times the Albany plant keeps a safety stock of the more popular standard containers for those of their customers that use them. Of necessity, the amount carried is small because of the amount of storage space available.

It also keeps a safety stock of the raw materials used to produce the bottles. Safety stock provides a degree of assurance that it won’t have shortages that would preclude it from shipping orders on time. There is a trade-off between the cost of carrying the safety stock and the cost of running out of bottles however. Its management’s decision on how much safety stock to carry because of the associated inventory carrying costs.

A related reason for carrying safety stock is contract penalty clauses. In this regard, while the company does not like to accept contracts that impose a penalty if the company misses a delivery date, it has accepted some in the past when the orders were very large and consequently had a potential for a larger-than-normal profit.

The company policy has always been to provide total customer satisfaction in terms of meeting committed ship dates. The company’s average shipping metrics for the last three years indicated that the Plant shipped at an average 96% on-time level. Management felt that this level satisfied the objective of providing total customer satisfaction since some shipping delays, due to adverse weather conditions for example, were beyond its control.

As another example of providing excellent service, at one time in the past the plant decided to ship a small order by air freight to meet one of their major customer’s emergency need dates rather than ship the order by normal means and having the shipment arrive late. The Plant decided that it was important to maintain its reputation of providing excellent customer service.

Riordan Manufacturing uses the Huffman Trucking Company to ship all of its products in the United States. Rates for shipping a full truckload of cargo to a single destination are lower than shipping partial loads. Higher rates for less-than-full truckload shipments are justified by Huffman for the following reasons:

* Huffman must try to find additional cargo to fill their truck to help pay for the fuel and truck driver labor required.
* Time on the road can be longer because of the different stops the truck must make to deliver cargo to different customers.
* Cargo is generally physically handled more frequently with partial shipments resulting in a greater chance for damage.

The Albany plant has a good record of supplying customer shipments on time that are relatively close to their plant but has had some problems meeting customer required due dates in the North and North-Eastern parts of the United States when winter conditions set in. To keep track of its performance the Plant maintains metrics on how many shipments are delivered late, the amount of time the shipments were late, and the reasons. The plant also ships large orders by train if delivery time is not a critical factor and if the customer has the means to pick up the cargo at the train depot at its destination.

Management is investigating whether to switch to a VMI supply chain system.

Pontiac, MI

The Pontiac, MI facility handles the company’s custom plastic fabrication. Customization areas include the part design and the color of the finished part.

Each custom project requires its own set of dies for the injection molding process. The Pontiac plant has the facilities to create new dies per customer specifications.

In general, custom parts are produced in small production runs. However, the Pontiac facility has to maintain sufficient stocks of a wide variety of raw materials in order to quickly respond to customer requests for new custom plastic parts.

Hangzhou, China

Riordan Manufacturing’s China plant operates as a decentralized unit of Riordan Manufacturing. It prepares its own forecast of electric fan sales throughout the world, which includes the United States. It schedules production of these fans to meet the forecasted sales.

The electric motors used in the fans are completely assembled units. They are purchased by buyers in the China Plant’s purchasing department from a local Chinese company. While this company attempts to maintain adequate quantities of electric motors in stock to meet all its order requirements, its on-time deliveries over the past year have averaged only 93%.

The buyers also purchase the Plant’s requirements for plastic polymers locally. The polymers, after being received, are melted at precisely controlled temperatures and injected into individual molds to create individual plastic parts required by the fans. This is accomplished by means of injection molding machines located in the production area. These capital expensive machines control the molding processes to the specifications of the plastic parts being produced, such as the fan blades and fan housings. The plastic fan blades, plastic fan housings, electric motors and other miscellaneous parts are then assembled to create finished models of electric fans. The assembled fans are individually packaged together with instructions on how to use the product and stored in a finished goods stockroom awaiting sale.

This part of the plant’s business is a make-to-stock operation in which the future demand for fans is forecasted based on taking the average of sales for the last three years and extrapolating it into the next year. The assumption in using this forecasting method is that history will repeat itself within manageable limits.

Orders for electric fans can be picked up at the China plant by the customers themselves or else they can be shipped to the customers anywhere in China. The China Plant uses a Chinese shipping company that offers services comparable to FedEx, but is less expensive. Orders are also shipped internationally by either FedEx or a Chinese shipping company that competes with FedEx. Two shipping companies are used by the China Plant for international shipments to assure that timely delivery services will always be available. The services both shippers offer are very similar and their shipping charges are competitive.

The China plant also designs and develops customized electric fan products for customers world-wide under individual customer contracts. After the design and development of a new electric fan is completed for a particular customer, a small production lot of the fans is usually scheduled, but under a separate contract. A separate contract from the development contract is used since the final cost of the fan can only be determined after its development is completed. This final cost is used in estimating the cost of the production quantity. A small production quantity is produced to statistically validate both the design of the fan and the production process used to build and assemble the fan, if the fan’s design represents a significant departure from the way typical fans had been designed and assembled. This initial production can be described as a production pilot run.

Estimates of follow-on orders for these new custom fans are not forecasted but are based on the customers indicating what their estimated yearly requirements will be. Since the fans are being produced to a particular customer’s unique requirements, they are not available for sale to other customers; consequently no additional forecasts are required. The customer’s indication of what its yearly requirements will be helps the China Plant to estimate what their yearly resources requirements will be in terms of production capacity, material requirements, and labor to satisfy the customer’s requirements. Customers normally negotiate their yearly requirements for fans in order to obtain the lowest price. They then provide periodic release orders for smaller quantities against the yearly total throughout the year.

Periodic orders for quantities of fans against the contract’s yearly total however are received from customers randomly throughout the year. This makes it difficult for the China Plant to estimate exact material requirements in the very short term since the orders are received randomly and are for varying quantities. To assure that it will be able to meet any delivery schedule its customers request, the China plant maintains a safety stock of polymer material even though the material is obtained locally and does not present an availability or a delivery problem, at least for the foreseeable future. It does not stock electric motors other than a small quantity of the more popular types for warranty repairs, but depends on the electric motor supplier to maintain motors in their stockroom. The China Plant, following good supply chain management practices, periodically provides the electric motor company with a list of the motors it forecasts it will need throughout the year to help the company plan which motors and how many it should carry in its stock.

Logistics requirements for the China plant to ship products internationally are similar to the requirements for shipping items from the United States to China. A logistics scenario for a shipment of items from the Riordan R & D facility, for example, to the China Plant would be as follows:

1. Riordan’s R & D Department contacts FedEx, the shipping company they plan to use, on a shipment going to the China Plant.
2. FedEx picks up the shipment at the R & D facility.
3. The R & D Facility provides FedEx with information on the items being shipped including export license if required, item descriptions, item model or part numbers, quantities, total cargo weight, Product Duty Classification Codes, and destination name and address. The United States Bureau of Export Administration (BXA) under the U. S. Commerce Department oversees export control and licensing in the United States. It is mandatory that companies follow their requirements when shipping items internationally. Originals of all documentation are maintained by Riordan’s R & D’s shipping department. Copies of all the shipping documents are also faxed to the China Plant.
	1. To determine the Product Duty Classification Code, the R & D Facility compares the technical description of the items being shipped against a set of technical descriptions known as both Schedule B and as the Harmonized Tariff Schedule (HTS) codes. The HTS is maintained by the U.S. Government. Coding items with duty classifications can be tricky business, but it is essential to international supply chains to make sure that only the correct amount of duty is imposed.
	2. The code for a fractional horsepower AC motor for example is 8501.20.2000. The code for polycarbonate plastic material is 3920.61.0000. The first six digits in each code is the code classification. The last four digits is a country specific code.
4. FedEx delivers the cargo and documentation to a customs broker at a United States sea port and then faxes the details of the shipment, including shipment arrival time in China, to FedEx in China so they will be prepared to receive the cargo upon arrival.
5. The Broker takes possession of the cargo and the documentation from FedEx and presents the documentation to U.S. Customs for clearance. Dock fees or any other fees such as channel dredging fees, if imposed, are identified and paid by the broker. The broker collects for all such payments from the R & D Facility when his responsibilities have been fulfilled and he submits his bill.
6. The Broker also arranges transportation with a ship company and has the cargo moved to the dock area along side the ship. Note that this same procedure would be used to ship by air. The shipping documentation travels with the cargo although copies are usually faxed to the customs office at the destination port ahead of time by the broker to help expedite receipt and clearance of the cargo when it arrives. Shipping charges by the ship company are billed directly to the R & D Facility.
7. The ship reaches its destination.
8. Chinese Customs examines, or re-examines the paperwork if previous copies were received, accepts it if there are no problems and releases the cargo, which has been or is in the process of being unloaded, to a designated local Broker. This Broker might be a member of the same Broker Company hired originally in the United States or it might be a different company. The stateside broker determines which one to use. The Broker accepts the paperwork and cargo and submits everything to the local FedEx carrier after making copies of all the documents for its files. If any additional fees such as dock fees are imposed, the Broker pays these and submits a complete bill for his services, including any fees he pays, to the China Plant.
9. Fed Ex accepts the cargo and paperwork from the Broker, signs off on receiving the cargo, and delivers the cargo to the China Plant. FedEx makes copies of all documentation for its records.
10. Upon receiving the delivery, the China Plant verifies the contents of the shipment while checking for damage, then accepts the shipment and provides FedEx with a signed receipt.

**Legal**

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| Lowell Bradford, Chief Legal Counsel, oversees all legal matters for Riordan Manufacturing. All contracts have to be approved by Mr. Bradford before they can be signed. Department heads forward all legal questions to Mr. Bradford who answers them from his personal knowledge and experience or after consulting with the attorneys at Litteral & Finkel, the law firm retained by Riordan Manufacturing.Mr. Bradford and Rick Ethridge handle all the company’s patent applications. Litigation, tax issues and real estate matters are referred to Litteral & Finkel, but closely supervised by Mr. Bradford. Per Mr. Bradford’s instructions, all communications between Litteral & Finkel pass through Mr. Bradford’s office.Litteral & Finkel have been representing Riordan Manufacturing since its inception. Dr. Riordan’s cousin was a partner in the firm and the close relationship between the two firms has continued even though Dr. Riordan’s cousin passed away eight years ago. Riordan Manufacturing pays Litteral & Finkel a monthly retainer to assure prompt response to any legal inquiries. If legal matters arise, legal fees are charged against the retainer. If the amount of the month’s legal fees exceeds the retainer, excess charges are billed to Riordan Manufacturing at the end of the month. Unused retainer amounts are not carried forward.Litteral & Finkel is a large international law firm that practices in all areas of the law. The firm has offices in a number of cities including: |
| * San Jose, CA
* Los Angeles, CA
* New York, NY
* Chicago, IL
* Atlanta, GA
* Detroit, MI
* Washington, D.C.
* Cleveland, OH
* Mexico City, Mexico
* London, United Kingdom
* Paris, France
 | * Geneva, Switzerland
* George Town, Grand Cayman
* Sydney, Australia
* Perth, Australia
* Dublin, Ireland
* Tokyo, Japan
* Seoul, South Korea
* Kuwait, Kuwait
* Doha, Qatar
* Moscow, Russia
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| Litteral & Finkel has provided Riordan Manufacturing with legal services in the areas of tax law, real estate transactions, employment law, immigration matters, civil litigation, workers compensation, labor law, and customs regulations. With its vast resources, Litteral & Finkel can immediately provide a team of attorneys, paralegals and clerks to any legal issue that confronts Riordan Manufacturing. With its international network, it can send attorneys from its closest offices and within a few hours be on the scene to provide legal advice anywhere in the world.  |

**Legal Communication**

**To:** Charles Williamson, Dale Edgel, Lowell Bradford, Clyde Cousins, Maria Trinh, Robert

Lord

**From:** Hugh McCauley

**Re:** China Relocation

**Confidential**

Our initial decision to locate our China operations in Hangzhou was driven largely by the fact

that our Chinese partners already had facilities there and the city’s proximity to the Qiantang

River. We thought that the river access which led on to Hangzhou Bay would be sufficient to

handle our shipping needs.

As the production volume from the China plant has increased, we are seeing that significant

savings can be had by utilizing container shipping companies such as the China Shipping

Container Lines, a branch of the China Shipping (Group) Company. Most of the container

shipping companies utilize ports in Hong Kong and Shanghai.

While the Shanghai port is only 180 kilometers away from our current location, we are incurring

additional logistical steps in shipping out of Shanghai.

· Currently, our products are trucked to a port on the Qiantang River and loaded into

shipping containers. The containers are then loaded onto barges that make their way to

the Shanghai port. The barges dock in Shanghai where the containers are offloaded

and trucked to another area of the port where they are loaded onto to the ships that will

take them to their final destinations.

· Alternatively, we could transport the products by truck to the port at Shanghai where

they would be loaded into containers and then directly onto the ships that will be taking

them to their final destinations. However, the trucking companies, knowing that they are

being used as an alternative to the local shipping companies to move the same products

to the Shanghai ports, generally charge just as much as the shipping companies for the

same volume of goods.

We believe that the relocation of the China operations to the city of Shanghai will result in

significant cost savings, will provide our operations with a more substantial urban infrastructure

and will put us into a better position to market and ship our Chinese products throughout Asia

and Europe.

China Relocation Memo

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We have incorporated a move of the China operations to Shanghai within the next five years

into the strategic planning of Riordan Manufacturing and Riordan Industries. Please begin

drafting strategic plans for how such a move will impact your areas of responsibility and how

your areas will facilitate the relocation.

**Sales and Marketing**

The firm is attempting to consolidate customer information to deliver better value to the customer. The firm has historical records in many disparate databases, as well as in paper files and microfiche. Below is a listing of information the firm has available to consolidate into a CRM system.

Historical Sales

Riordan has a system to track historical sales. In the past, most sales data was recorded using paper and pencil. In the last few years, the firm has managed the information electronically. Information available includes the following:

* Dates including order, delivery, and payment dates by order.
* Unit and dollar volume of each product including plastic bottles, fans, heart valves, medical stents, and custom plastic parts rolled up to be examined by product group and customer.
* Sales by customer to include price paid, cost, margin, and discount given.

Files of Past Marketing Research, Marketing Plans, and Design Awards

The marketing organization wants to build on past knowledge. As a result, past marketing plans and results from past market research studies are stored in a file cabinet in the marketing department. The firm has a showcase in the lobby to display the various design awards earned. The firm is assessing the possibility of hiring a part-time college student to scan the documents electronically.

Sales Database

The company has 15 – 20 major customers, including a government contract for fans. The firm has 12 minor customers. Each member of the sales force maintains his/her own set of customer records using a variety of tools. Some sales team members use paper and pencil, others sales management software such as Act, and others a hybrid. In order to better understand and anticipate customer needs, the firm is evaluating a new integrated customer management system to accompany the new team selling approach that will be soon rolled out.

Production Records

The production plan maintains records of the number of units produced of each item by shift, which can be rolled up to the product group and year.

Profit and Loss Statements by Item and Group

The marketing department, with the support of the finance and production departments, maintains profit and loss statements, by item and by group.

Marketing Budget

The firm has historical and current annual budget allocations for marketing communications and marketing research.

Marketing Communications activities include:

* Sales force promotions
* Price / volume discounts to key accounts
* Public relations
* Brand development
* Tradeshows, events, and sponsorships
* Customer user group underwriting
* Literature and other collateral material

Marketing Research expenditures include:

* Market size / opportunity studies
* Customer focus groups
* Brand development research

Marketing Budget Anticipated Results

Two year plan to reach the $50 million revenue mark. This objective was developed collaboratively with Dr. Riordan along with the executive team. It incorporates the input of the line managers closest to the day-to-day operations. The objective will be achieved through:

* Increased sales to existing customers by increasing sales force promotions, price discounts, and customer user group services.
* Expanded sales to new customers by implementing public relations activities, trade shows, brand development and sales force promotions.